Technical Characteristics

Power supply and Power Range		
Voltage and power range	Single-Phase	200-240 V / +10%/-15%: 1.5 to 3 hp (1.1 to 2.2 kW)
	Three-Phase	200-240 V / +10%/-15%: 1.5 to 40 hp (1.1 to 30 kW)
		380-480 V / +10%/-15%: 2 to 60 hp (1.5 to 45kW)
Frequency	50 / 60 Hz +-2% (48 to 63 Hz)	
Displacement factor	Greater than 0.98	
Efficiency	Greater than 0.97	

Motor		
Voltage	Three Phase, 0 up to power supply voltage	
Frequency	0 to 400 Hz	
Switching Frequency	Standard: 5kHz Options available: 2.5 / 5 / 10 kHz	
Overload	Normal Duty Cycle	110% for 1 min every 10min
		150% for 3 sec every 10min
	Heavy Duty Cycle	150% for 1 min every 10min
		200% for 3 sec every 10min
Time (ramps)	Acceleration	0 to 999 seconds
	Deceleration	0 to 999 seconds

Environment	
Temperature of Operation	- 10ºC to 50ºC
	Up to 60°C with current derating (2% for each 1°C above 50°C)
Humidity	5 to 90% without condensation
Altitude	0 to 1000 meters
	Up to 4000 meters with current reduction (1% for every 100 meters above 1000 meters)

Protection Degree	
IP20	Frame Size A, B and C without upper cover and conduit kit
NEMA 1 / IP20	Frame Size D without IP21 kit
IP21	Frame Size A, B and C with upper cover and conduit kit
NEMA 1 / IP21	Frame Size A, B and C with upper cover and conduit kit
	Frame Size D with IP21 kit

Braking Methods	
Rheostatic Braking	Supply available to user
	External braking resistor (not provided)
Optimal Braking	Does not need braking resistor
DC Braking	Direct current applied to the motor

Performance		
Scalar (V/f)	Speed Control	Regulation: 1% of rated speed
		Speed variation range: 1:20
Voltage Vector (VVW)		Regulation: 1% of rated speed
		Speed variation range: 1:30
Sensorless Vector		Regulation: 0.5% of rated speed
		Speed variation range: 1:100
Vector with Encoder (with accessory ENC-01 or ENC-02)		Regulation: +/- 0.01% of rated speed with 14-bit analog input (IOA)
		Regulation: +/- 0.01% of rated speed with digital reference (keyboard, serial fieldbus, electronic potentiometer, multispeed)
		Regulation: +/- 0.05% of rated speed with 12-bit analog input
	Torque Control	Range: 10 to 180%
		Regulation: +/- 5% of rated torque
Sensorless Vector		Range: 20 to 180%
		Regulation: +/-10% of rated torque (above 3 Hz)

Inputs and Outputs (I/Os) in the Standard product		
Inputs	Digital	6 isolated inputs, 24 Vdc, programmable functions
	Analog	2 differential inputs isolated by differential amplifier, programmable functions
		Resolution: - AI1: 12 bits - AI2: 11 bits + signal
		Signals: (0 to 10) V, (0 to 20) mA or (4 to 20) mA
		Impedance: - 400 kΩ for signal (0 to 10) V - 500 Ω for signal (0 to 20) mA or (4 to 20) mA
Outputs	Relay	3 relays with NA/NF (NO/NC) contacts, 240 Vac / 1A, programmable functions
	Analog	2 isolated outputs, programmable functions
		Resolution: 11 bits
		Load: 0 to 10 V: R_L >= 10 kΩ 0 to 20 mA or 4 to 20 mA: R_L < 500Ω
Available supply to user		24 Vdc + -20%, 500 mA